



Applications of Knot Theory

By Dorothy Buck, Erica Flapan

American Mathematical Society. Hardback. Book Condition: new. BRAND NEW, Applications of Knot Theory, Dorothy Buck, Erica Flapan, Over the past 20-30 years, knot theory has rekindled its historic ties with biology, chemistry, and physics as a means of creating more sophisticated descriptions of the entanglements and properties of natural phenomena - from strings to organic compounds to DNA. This volume is based on the 2008 AMS Short Course, Applications of Knot Theory. The aim of the Short Course and this volume, while not covering all aspects of applied knot theory, is to provide the reader with a mathematical appetizer, in order to stimulate the mathematical appetite for further study of this exciting field. No prior knowledge of topology, biology, chemistry, or physics is assumed. In particular, the first three chapters of this volume introduce the reader to knot theory (by Colin Adams), topological chirality and molecular symmetry (by Erica Flapan), and DNA topology (by Dorothy Buck). The second half of this volume is focused on three particular applications of knot theory. Louis Kauffman discusses applications of knot theory to physics, Nadrian Seeman discusses how topology is used in DNA nanotechnology, and Jonathan Simon discusses the statistical and energetic properties of...



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